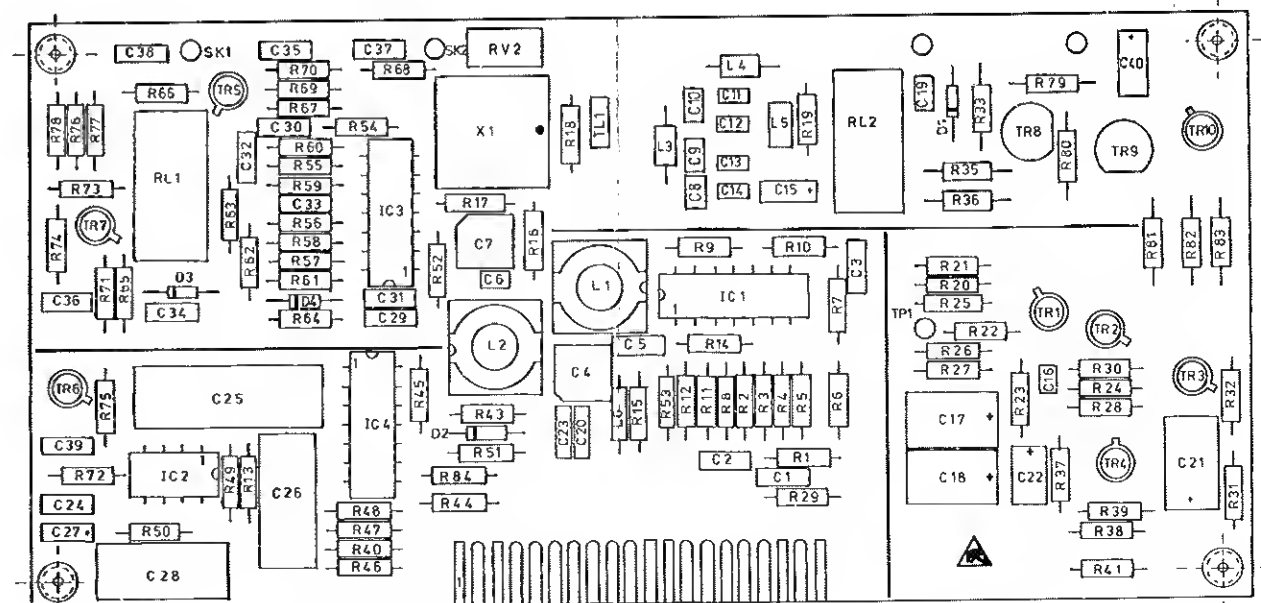


Fig. 23 Circuit Diagram,
Calibration unit, ③0



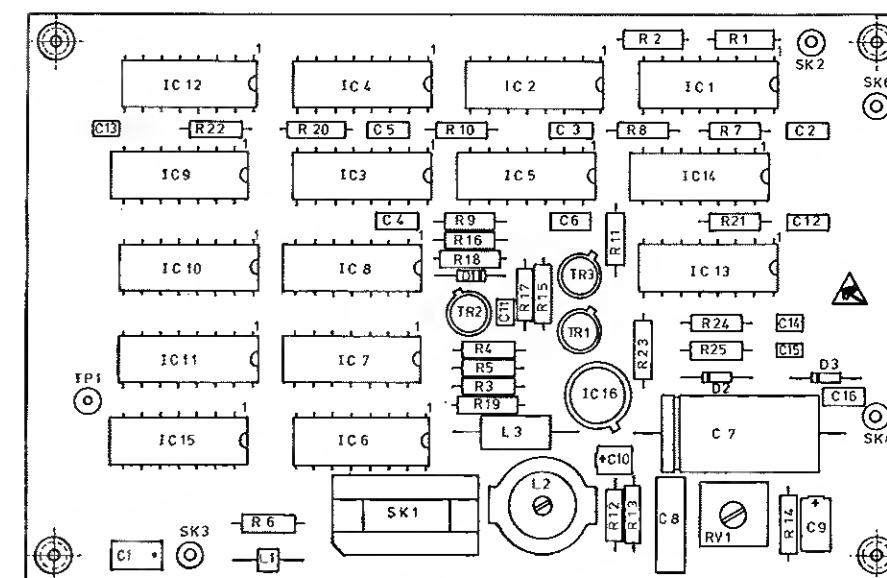
CIRCUIT REFERENCES TO BE PRECEDED BY
BOARD ASSEMBLY NUMBER.
e.g. R41 BECOMES R3041
C7 BECOMES C3007

Fig. 24 Component Layout,
Calibration unit, ③0

ASSEMBLY P.C.B. A33 DIVIDER 1

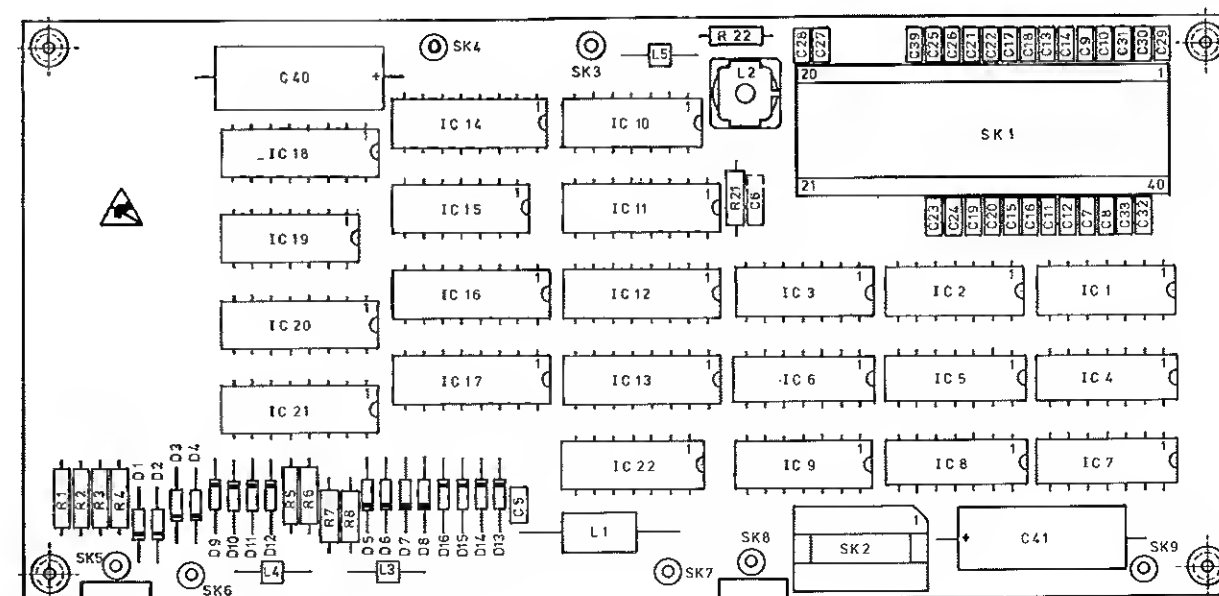
REF.	VALUE	TOL. ± %	RATING	TYPE	PART NO.
R1	29k8	0.5	0W125	MF	0000-7599.174/-
R2	60k4	0.5	0W125	MF	0000-7598.243/-
R3	120k	0.5	0W125	MF	0000-7598.256/-
R4	243k	0.5	0W125	MF	0000-7598.269/-
R5	301k	0.5	0W125	MF	0000-7598.272/-
R6	612k	0.5	0W125	MF	0000-7600.474/-
R7	1M2	5	0W35	CF	0001-0007.297/-
R8	2M4	5	0W35	CF	0000-7601.376/-
R21	10k	1	0W35	MF	0001-0002.137/-
R22	5R62	1	0W35	MF	0001-0003.945/-
C5	470p	10	63	Cer.	0001-0004.669/-
C6	22p	2	63	Cer.	0001-0004.290/-
C7	1n	10	63	Cer.	0001-0004.698/-
C8	1n	10	63	Cer.	0001-0004.698/-
C9	1n	10	63	Cer.	0001-0004.698/-
C10	1n	10	63	Cer.	0001-0004.698/-
C11	1n	10	63	Cer.	0001-0004.698/-
C12	1n	10	63	Cer.	0001-0004.698/-
C13	1n	10	63	Cer.	0001-0004.698/-
C14	1n	10	63	Cer.	0001-0004.698/-
C15	1n	10	63	Cer.	0001-0004.698/-
C16	1n	10	63	Cer.	0001-0004.698/-
C17	1n	10	63	Cer.	0001-0004.698/-
C18	1n	10	63	Cer.	0001-0004.698/-
C19	1n	10	63	Cer.	0001-0004.698/-
C20	1n	10	63	Cer.	0001-0004.698/-
C21	1n	10	63	Cer.	0001-0004.698/-
C22	1n	10	63	Cer.	0001-0004.698/-
C23	1n	10	63	Cer.	0001-0004.698/-
C24	1n	10	63	Cer.	0001-0004.698/-
C25	1n	10	63	Cer.	0001-0004.698/-
C26	1n	10	63	Cer.	0001-0004.698/-
C27	1n	10	63	Cer.	0001-0004.698/-
C28	1n	10	63	Cer.	0001-0004.698/-
C29	1n	10	63	Cer.	0001-0004.698/-
C30	1n	10	63	Cer.	0001-0004.698/-
C31	1n	10	63	Cer.	0001-0004.698/-
C32	1n	10	63	Cer.	0001-0004.698/-
C33	1n	10	63	Cer.	0001-0004.698/-
C39	1n	10	63	Cer.	0001-0004.698/-
C40	100µ	+50-10	25	Elec.	0000-7568.202/-
C41	10µ	+50-10	63	Elec.	0001-0041.693/-
D1				1N4448	0001-0018.493/-
D2				1N4448	0001-0018.493/-
D3				1N4448	0001-0018.493/-
D4				1N4448	0001-0018.493/-
D5				1N4448	0001-0018.493/-
D6				1N4448	0001-0018.493/-
D7				1N4448	0001-0018.493/-
D8				1N4448	0001-0018.493/-
D9				1N4448	0001-0018.493/-
D10				1N4448	0001-0018.493/-
D11				1N4448	0001-0018.493/-
D12				1N4448	0001-0018.493/-
D13				1N4448	0001-0018.493/-
D14				1N4448	0001-0018.493/-

REF.	VALUE	TOL. ± %	RATING	TYPE	PART NO.
D15				1N4448	0001-0018.493/-
D16				1N4448	0001-0018.493/-
IC1				4011	0001-0015.988/-
IC2				4011	0001-0015.988/-
IC3				4011	0001-0015.988/-
IC4				14023	0001-0016.026/-
IC5				14023	0001-0016.026/-
IC6				14023	0001-0016.026/-
IC7				14082	0001-0070.868/-
IC8				14082	0001-0070.868/-
IC9				4012	0001-0065.475/-
IC10				4073	0001-0070.871/-
IC11				4027	0001-0016.042/-
IC12				4160	0000-7660.032/-
IC13				4049	0001-0068.197/-
IC14				4027	0001-0016.042/-
IC15				4011	0001-0015.988/-
IC16				4160	0000-7660.032/-
IC17				4160	0000-7660.032/-
IC18				4027	0001-0016.042/-
IC19				4011	0001-0015.988/-
IC20				4160	0000-7660.032/-
IC21				4160	0000-7660.032/-
IC22				14023	0001-0016.026/-
L1				INDUCTOR	0001-0042.757/-
L2				INDUCTOR	4502-1423.003/4
L3				FERRITE BEAD	0000-7567.737/-
L4				FERRITE BEAD	0000-7567.737/-
L5				FERRITE BEAD	0000-7567.737/-
SK1				SOCKET D.I.L. 40-WAY	
J23	- 8040				0000-7541.711/-
SK2				SOCKET D.I.L. 14-WAY	0000-7518.388/-
A33				P.C.B. DIVIDER 1	4502-0133.006/2



COMPONENT REFERENCES TO BE PRECEDED
BY BOARD ASSEMBLY NUMBER eg R21 BECOMES R3421
C4 BECOMES C3404

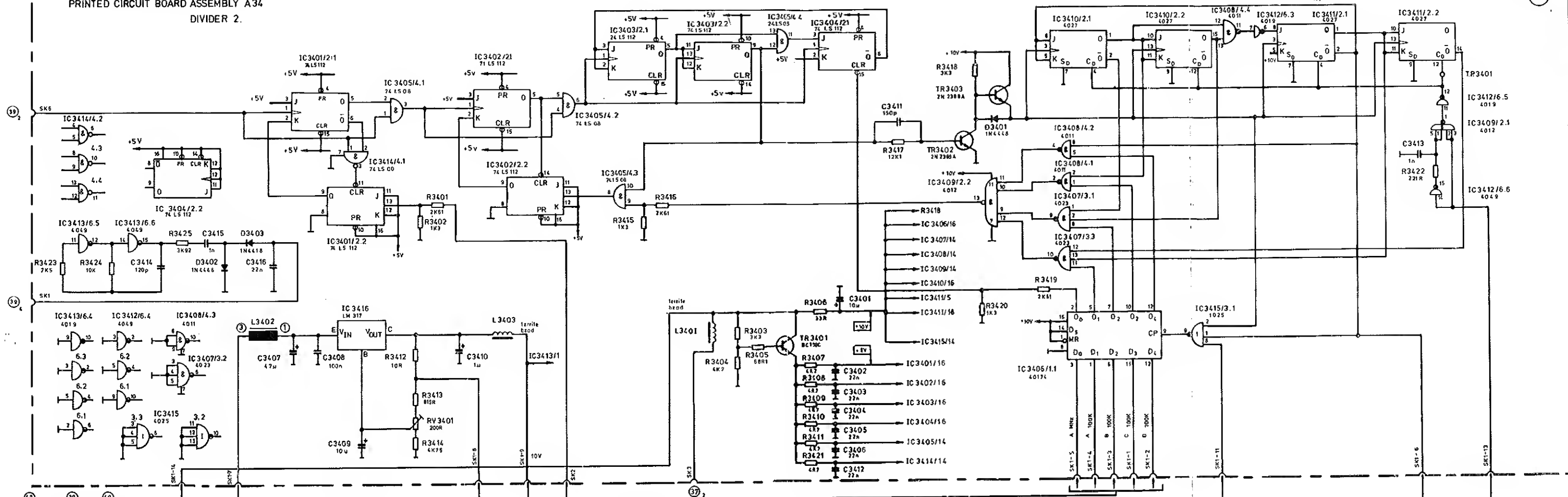
Fig. 25 Component Layout, Divider 2, (34)



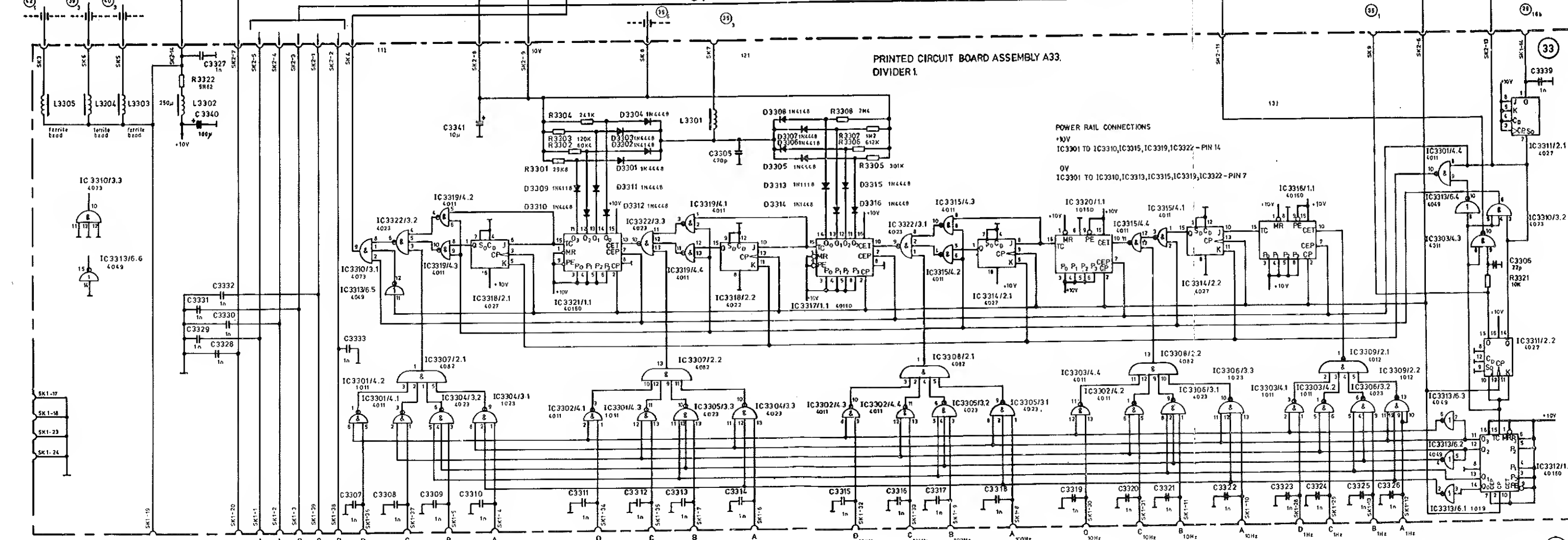
CIRCUIT REFERENCES TO BE PRECEDED
BY BOARD ASSEMBLY NUMBER
eg R7 BECOMES R3307
C30 BECOMES C3330

Fig. 26 Component Layout, Divider 1, (33)

PRINTED CIRCUIT BOARD ASSEMBLY A34
DIVIDER 2.



PRINTED CIRCUIT BOARD ASSEMBLY A33
DIVIDER 1.



POWER RAIL CONNECTIONS

+10V
IC3301 TO IC3310, IC3315, IC3319, IC3322 - PIN 14

0V
IC3301 TO IC3310, IC3313, IC3315, IC3319, IC3322 - PIN 7

- 10) 200KHz CLOCK
- 11) SUB HARMONIC DETECTION PULSE
- 12) PHASE COMPENSATION CURRENT
- 13) PHASE MEASURING TIME
- 14) DATA CHANGE

Fig. 27 Circuit Diagram, Divider 1, 33
and Divider 2, 34

ASSEMBLY P.C.B. A34 DIVIDER 2

REF.	VALUE	TOL. ± %	RATING	TYPE	PART NO.
R1	2k61	1	OW35	MF	0001-0001.565/-
R2	1k3	1	OW35	MF	0001-0001.303/-
R3	3k3	2	OW25	MF	4980-0000.012/-
R4	4k7	2	OW25	MF	0001-0001.811/-
R5	68R1	2	OW25	MF	0001-0000.427/-
R6	33R	2	OW25	MF	0000-7601.347/-
R7	4R7	5	OW25	MF	0001-0006.609/-
R8	4R7	5	OW25	MF	0001-0006.609/-
R9	4R7	5	OW25	MF	0001-0006.609/-
R10	4R7	5	OW25	MF	0001-0006.609/-
R11	4R7	5	OW25	MF	0001-0006.609/-
R12	10R	1	OW35	MF	0001-0000.074/-
R13	619R	0.5	OW125	MF	0000-7512.245/-
R14	4k75	0.5	OW125	MF	0000-7535.251/-
R15	1k3	1	OW35	MF	0001-0001.303/-
R16	2k61	1	OW35	MF	0001-0001.565/-
R17	12k1	1	OW35	MF	0001-0002.218/-
R18	3k3	2	OW25	MF	4980-0000.012/-
R19	2k61	1	OW35	MF	0001-0001.565/-
R20	1k3	1	OW35	MF	0001-0001.303/-
R21	4R7	5	OW25	MF	0001-0006.609/-
R22	221R	1	OW35	MF	0001-0000.715/-
R23	7k5	1	OW35	MF	0001-0002.014/-
R24	10k	1	OW35	MF	0001-0002.137/-
R25	3k92	1	OW35	MF	0001-0001.730/-
C1	10μ	20	25	Tant.	0001-0040.885/-
C2	22n	20	100	Cer.	0001-0006.418/-
C3	22n	20	100	Cer.	0001-0006.418/-
C4	22n	20	100	Cer.	0001-0006.418/-
C5	22n	20	100	Cer.	0001-0006.418/-
C6	22n	20	100	Cer.	0001-0006.418/-
C7	47μ	+50-10%	40	Tant.	0001-0041.758/-
C8	100n	10	100	PE	0001-0010.365/-
C9	10μ	20	25	Tant.	0001-0040.885/-
C10	1μ	20	35	Tant.	0001-0040.704/-
C11	150p	2	63	Cer.	0001-0004.575/-
C12	22n	20	100		0001-0006.418/-
C13	1n	20	100		0001-0004.698/-
C14	120p	2	63	Cer.	0001-0004.562/-
C15	1n	20	100		0001-0004.698/-
C16	22n	20	100	Cer.	0001-0006.418/-
TR1				BC109 C	0000-7602.126/-
TR2				2N2369A	0000-7542.066/-
TR3				2N2369A	0000-7542.066/-
D1				1N4448	0001-0018.493/-
D2				1N4448	0001-0018.493/-
O3				1N4448	0001-0018.493/-
RV1	200R	20	OW5	Var.	0000-7601.622/-
IC1				74 LS 112	0001-0071.427/-
IC2				74 LS 112	0001-0071.427/-
IC3				74 LS 112	0001-0071.427/-
IC4				74 LS 112	0001-0071.427/-
IC5				74 LS 08	0001-0067.169/-
IC6				40174	0000-7565.399/-
IC7				4023	0001-0016.026/-
IC8				4011	0001-0015.988/-
IC9				4012	0001-0065.475/-

REF.	VALUE	TOL. ± %	RATING	TYPE	PART NO.
IC10				4027	0001-0016.042/-
IC11				4027	0001-0016.042/-
IC12				4049	0001-0068.197/-
IC13				4049	0001-0068.197/-
IC14				74 LS 00	0001-0065.695/-
IC15				4025	0001-0065.488/-
IC16				LM 317	0000-7596.724/-
L1				B62110	0000-7567.737/-
L2				INDUCTOR	4502-1429.007/4
L3				B82114	0001-0042.757/-
SK1				SOCKET D.I.L. 14-WAY	
				J23 - 2028Z	0000-7518.388/-
A34				P.C.B. DIVIDER 2	4502-0134.005/2

ASSEMBLY P.C.B. A35 PHASE DETECTOR

REF.	VALUE	TOL. ± %	RATING	TYPE	PART NO.
R1	8k25	1	OW35	MF	0001-0002.056/-
R2	5k23	1	OW35	MF	0001-0001.866/-
R3	7k15	1	OW35	MF	0001-0001.992/-
R4	909R	0.5	OW125	MF	0000-7509.685/-
R5	68R1	1	OW35	MF	0001-0000.427/-
R6	27k4	1	OW35	MF	0001-0002.522/-
R7	6k19	1	OW35	MF	0001-0001.934/-
R8	25k5	0.5	OW125	MF	0000-7599.682/-
R9	20k	1	OW35	MF	0001-0002.409/-
R10	200K	0.5	OW125	MF	0000-7591.428/-
R11	562k	0.5	OW125	MF	0000-7598.298/-
R12	196k	0.5	OW125	MF	0000-7598.308/-
R13	16k5	1	OW35	MF	0001-0002.328/-
R14	7k15	1	OW35	MF	0001-0001.992/-
R15	226R	0.5	OW125	MF	0000-7515.174/-
R16	68R1	1	OW35	MF	0001-0000.427/-
R17	3k83	1	OW35	MF	0001-0001.727/-
R18	7k32	1	OW35	MF	0001-0002.001/-
R19	6k34	0.5	OW125	MF	0000-7512.339/-
R20	105k	0.5	OW125	MF	0000-7598.285/-
R21	26k7	0.5	OW125	MF	0000-7528.747/-
R22	54k9	1	OW35	MF	0001-0002.784/-
R23	86k6	1	OW35	MF	0001-0002.959/-
R24	1k5	1	OW35	MF	0001-0001.358/-
R25	68R1	1	OW35	MF	0001-0000.427/-
R26	26k7	1	OW35	MF	0001-0002.519/-
R27	7k15	1	OW35	MF	0001-0001.992/-
R28	16k5	1	OW35	MF	0001-0002.328/-
R29	1k33	1	OW35	MF	0001-0001.316/-
R30	909R	1	OW35	MF	0001-0001.183/-
R31	68R1	1	OW35	MF	0001-0000.427/-
R32	270k	2	OW25	MF	0000-7601.363/-
R33	348k	1	OW35	MF	0001-0003.314/-
R34	100R	1	OW35	MF	0001-0000.537/-
R35	402k	1	OW35	MF	0001-0063.121/-
R36	84k5	1	OW35	MF	0001-0002.946/-
R37	196k	1	OW35	MF	0001-0065.394/-
R38	59k	1	OW35	MF	0001-0002.810/-

REF.	VALUE	TOL. ± %	RATING	TYPE	PART NO.
R40	3k01	1	OW35	MF	0001-0001.620/-
R41	35k7	1	OW35	MF	0001-0002.616/-
R42	1M2	5	OW25	CF	0001-0007.297/-
R43	100R	1	OW35	MF	0001-0000.537/-
R45	2k7	2	OW25	MF	0000-7558.380/-
R46	287R	1	OW35	MF	0001-0000.786/-
R47	22k1	1	OW35	MF	0001-0002.441/-
R48	3k01	1	OW35	MF	0001-0001.620/-
R49	4k02	1	OW35	MF	0001-0001.743/-
R50	1k5	1	OW35	MF	0001-0001.358/-
R51	4k02	1	OW35	MF	0001-0001.743/-
R52	475R	1	OW35	MF	0001-0000.964/-
R53	68R1	1	OW35	MF	0001-0000.427/-
R54	200R	1	OW35	MF	0001-0000.676/-
R55	68R1	1	OW35	MF	0001-0000.427/-
R56	475R	1	OW35	MF	0001-0000.964/-
R57	3M3	5	OW25	CF	0001-0007.336/-
R58	100R	1	OW35	MF	0001-0000.537/-
R59	7k5	1	OW35	MF	0001-0002.014/-
R60	301R	1	OW35	MF	0001-0000.799/-
R61	47R	2	OW25	MF	0000-7601.321/-
R62	3M3	5	OW25	CF	0001-0007.336/-
R63	10M	5	OW33	CF	0001-0005.707/-
R64	4M7	5	OW33	CF	0001-0005.671/-
R65	665k	1	OW35	MF	0000-7518.948/-
R66	3k3	2	OW25	MF	4980-0000.012/-
R67	1M8	5	OW25	CF	0001-0007.310/-
R81	10k	1	OW35	MF	0001-0002.137/-
R82	1M2	5	OW25	CF	0001-0007.297/-
R83	100k	1	OW35	MF	0001-0002.991/-
C1	33p	2	63	Cer.	0001-0004.342/-
C2	22n	20	100	Cer.	0001-0006.418/-
C3	100n	10	100	PE	0001-0010.365/-
C4	10p	2	63	Cer.	0001-0004.177/-
C5	22n	20	100	Cer.	0001-0006.418/-
C6	22n	20	100	Cer.	0001-0006.418/-
C7	10p	2	63	Cer.	0001-0004.177/-
C8	10μ	2	40		0000-7603.418/-
C10	330n	10	100	PE	0001-0010.420/-
C11	220n	10	100	PE	0001-0010.404/-
C12	4μ7	20	6.3	Tant.	0001-0040.801/-
C13	1n5	10	63	Cer.	0001-0004.711/-
C14	22n	10	100	PE	0001-0010.255/-
C15	100p	2	63	Cer.	0001-0004.517/-
C16	330n	10	100	PE	0001-0010.420/-
C17	1μ0	20	35	Tant.	0001-0040.704/-
C18	33p	2	63	Cer.	0001-0004.342/-
C19	1μ0	10	100		0001-0010.093/-
C20	22n	20	100	Cer.	0001-0006.418/-

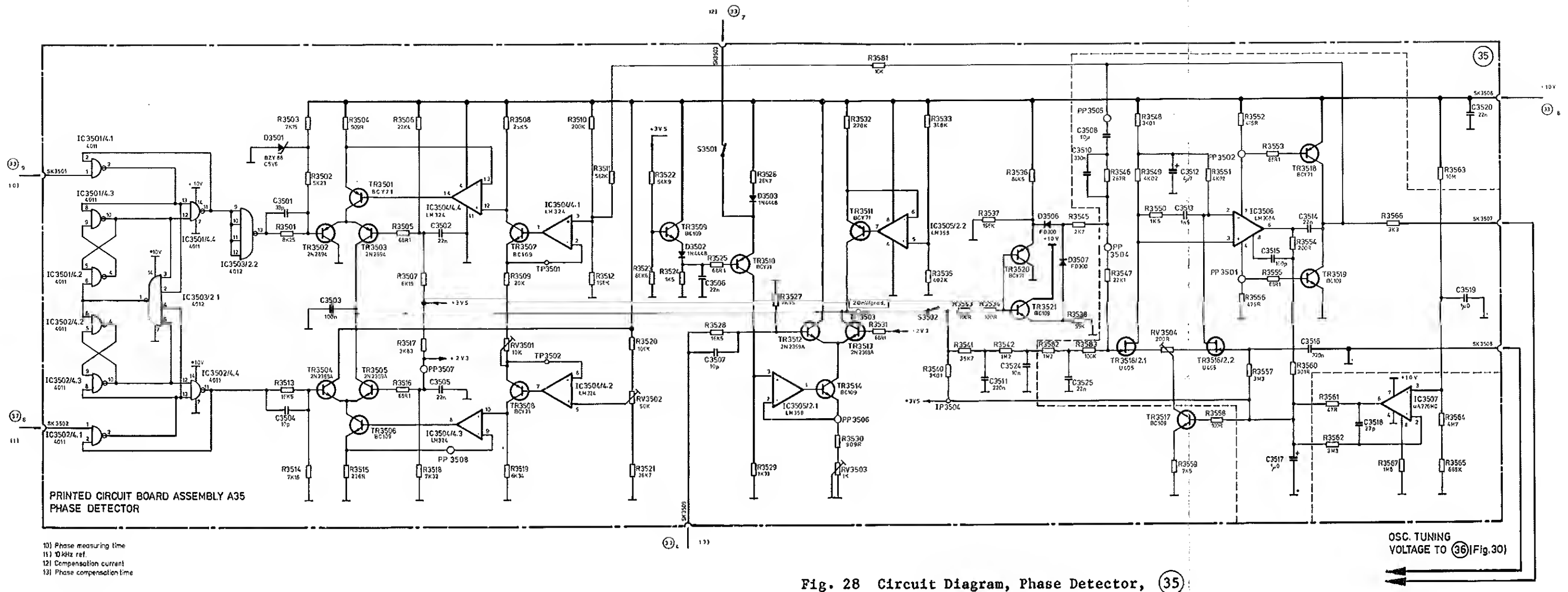


Fig. 28 Circuit Diagram, Phase Detector, (35)

REF.	VALUE	TOL. ± %	RATING	TYPE	PART NO.	REF.	VALUE	TOL. ± %	RATING	TYPE	PART NO.
C24	10n	10	100	PE	0001-0010.213/-	O1				BZY 88C5V6	0001-0018.859/-
C25	22n	20	100	PE	0001-0010.255/-	D2				1N4448	0001-0018.493/-
TR1				BCY71	0001-0016.534/-	O3				1N4448	0001-0018.493/-
TR2				2N2894	0001-0016.929/-	O6				FDH 300	0001-0018.192/-
TR3				2N2894	0001-0016.929/-	D7				FDR 300	0001-0018.192/-
TR4				2N2369A	0000-7542.066/-	RV1	10k	10 LIN	OW2	Var.	0000-7537.929/-
TR5				2N2369A	0000-7542.066/-	RV2	50k	20 LIN	OW2	Var.	0000-7571.752/-
TR6				BC109	0000-7602.029/-	RV3	1k	20 LIN	OW2	Var.	0000-7571.723/-
TR7				BC109	0000-7602.029/-	RV4	200R	10 LIN	OW2	Var.	0000-7571.710/-
TR8				BCY71	0001-0016.534/-	IC1				4011	0001-0015.988/-
TR9				BC109	0000-7602.029/-	IC2				4011	0001-0015.988/-
TR10				BCY71	0001-0016.534/-	IC3				4012	0001-0065.475/-
TR11				BCY71	0001-0016.534/-	IC4				LM 324	0000-7578.085/-
TR12				2N2369A	0000-7542.066/-	IC5				LM 358	0000-7581.140/-
TR13				2N2369A	0000-7542.066/-	IC6				LM 308 A	0000-7537.071/-
TR14				BC109	0000-7602.029/-	IC7				µA 776 HC	0000-7604.425/-
TR16				U405	0000-7567.863/-	S1				09100003	0000-7567.999/-
TR17				BC109	0000-7602.029/-	S2				09100003	0000-7567.999/-
TR18				BCY71	0001-0016.534/-	A35				P.C.B. PHASE	
TR19				BC109	0000-7602.029/-					DETECTOR	4502-0135.004/2
TR20				BCY71	0001-0016.534/-						
TR21				BC109	0000-7602.029/-						

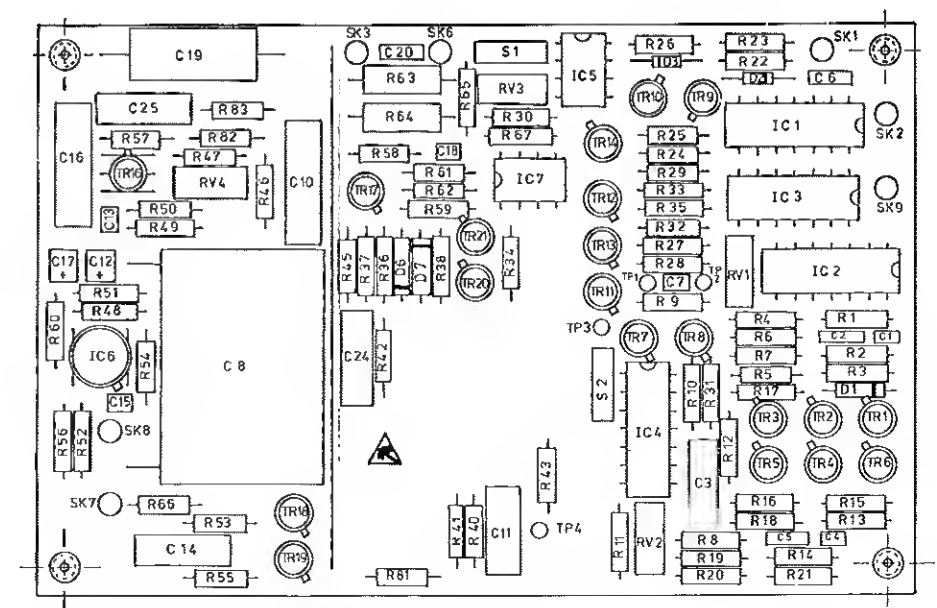


Fig. 29 Component Layout,
Phase Detector, (35)

ASSEMBLY P.C.B. A36 4 - 4.62Mhz V.C.O.

REF.	VALUE	TOL. ± %	RATING	TYPE	PART NO.
R1	1k8	2	0W25	MF	0001-0015.510/-
R2	221k	1	0W35	MF	0001-0003.217/-
R3	221k	1	0W35	MF	0001-0003.217/-
R4	100R	1	0W35	MF	0001-0000.537/-
R5	4k7	2	0W25	MF	0001-0001.811/-
R6	68k1	1	0W35	MF	0001-0000.427/-
R7	100R	1	0W35	MF	0001-0000.537/-
R8	10k	1	0W35	MF	0001-0002.137/-
R9	100R	1	0W35	MF	0001-0000.537/-
R10	47k	2	0W25	MF	0000-7558.393/-
R11	39k2	1	0W35	MF	0001-0002.658/-
R12	1k	1	0W35	MF	0001-0001.219/-
R13	33k	2	0W25	MF	4980-0000.009/-
R14	470R	2	0W25	MF	0000-7560.608/-
R15	4k7	2	0W25	MF	0001-0001.811/-
R16	4R7	5	0W25	MF	0001-0006.609/-
R17	1k21	1	0W35	MF	0001-0001.277/-
R18	100R	1	0W35	MF	0001-0000.537/-
C1	100n	10	100	PE	0001-0010.365/-
C2	100n	10	100	PE	0001-0010.365/-
C4	2p2	5	63		0000-7605.699/-
C5	6p8	20	6.3	Tant.	0001-0040.830/-
C6	10n	20	40	Cer.	0001-0004.818/-
C7	10n	20	40	Cer.	0001-0004.818/-
C8	100n	10	100	PE	0001-0010.365/-
C9	10n	20	40	Cer.	0001-0004.818/-
C10	1n	20	63	Cer.	0001-0004.698/-
C11	22p	20	16	Tant.	0001-0040.966/-
C12	100n	10	100	PE	0001-0010.365/-
C13	10p	20	16	Al.Ox.	0000-7602.773/-
C14	100p	2	63	PS	0000-7629.523/-
C15	100p	2	63	PS	0000-7629.523/-
TR1				BF 245 A	0001-0016.628/-
TR2				BF 245 A	0001-0016.628/-
TR3				BF 245 A	0001-0016.628/-
TR4				BC109	0000-7602.029/-
TR5				2N2369A	0000-7542.066/-
TR6				BC109	0000-7602.029/-
D1				KV1225	0000-7630.583/-
D3				1N5711	0001-0018.228/-
D4				1N5711	0001-0018.228/-
RV1	50k	20	0W5		0000-7601.635/-
RV2	1M	20	0W5		0000-7601.619/-
L1	6pH			L24/4502/D	4502-1424.002/4
L2				L26/L27/4502/D	4502-1426.000/4
L3				L26/L27/4502/D	4502-1426.000/4
L4	100pH			210/16471	0000-7556.298/-
L5	200pH			L25/4502/D	4502-1425.001/4
A36				P.C.B. 4-4.62MHz V.C.O	4502-0136.003/3

ASSEMBLY P.C.B. A39 BUFFER

REF.	VALUE	TOL. ± %	RATING	TYPE	PART NO.
R1	68R1	1	0W35	MF	0001-0000.427/-
R2	22k1	1	0W35	MF	0001-0002.441/-
R3	68R1	1	0W35	MF	0001-0000.427/-
R4	27k	2	0W25	MF	0000-7558.377/-
R5	68R1	1	0W35	MF	0001-0000.427/-
R6	5k62	1	0W35	MF	0001-0001.895/-
R7	5k62	1	0W35	MF	0001-0001.895/-
R8	68R1	1	0W35	MF	0001-0000.427/-
R9	1k	1	0W35	MF	0001-0001.219/-
R10	18k	2	0W25	MF	0001-0027.484/-
R11	18k	2	0W25	MF	0001-0027.484/-
R12	6k81	1	0W35	MF	0001-0001.976/-
R13	2k21	1	0W35	MF	0001-0001.497/-
R14	27R	2	0W25	MF	0001-0065.200/-
R15	1k8	2	0W25	MF	0001-0014.510/-
R16	18k	2	0W25	MF	0001-0027.484/-
R17	18k	2	0W25	MF	0001-0027.484/-
R18	100k	2	0W25	MF	0001-0002.991/-
C1	4p7	20	10	Tant.	0001-0040.801/-
C2	22n	20	40	Cer.	0001-0006.418/-
C3	1n	20	100	Cer.	0001-0004.698/-
C4	10n	20	100	Cer.	0001-0004.818/-
C5	10n	20	100	Cer.	0001-0004.818/-
C6	1n	20	100	Cer.	0001-0004.698/-
TR1				2N2369A MF	0000-7542.066/-
TR2				2N2894	0001-0016.929/-
TR3				2N2894	0001-0016.929/-
TR4				2N2894	0001-0016.929/-
TR5				2N2369A	0000-7542.066/-
A39				P.C.B. BUFFER	4502-0139.003/3

ASSEMBLY P.C.B. A40 SYNTHESIZER AMPLIFIER

REF.	VALUE	TOL. ± %	RATING	TYPE	PART NO.
R1	5k62	1	0W35	MF	0001-0001.895/-
R2	24k9	1	0W35	MF	0001-0002.483/-
R3	68R1	1	0W35	MF	0001-0000.427/-
R4	3k3	2	0W25	MF	4980-0000.012/-
R5	1k21	1	0W35	MF	0001-0001.277/-
R6	1k65	1	0W35	MF	0001-0059.232/-
R7	51R1	1	0W35	MF	0001-0065.284/-
R8	75R	1	0W35	MF	0001-0000.456/-
R9	237R	1	0W35	MF	0001-0003.754/-
R10	68R1	1	0W35	MF	0001-0000.427/-
R11	21k	1	0W35	MF	0001-0002.425/-
R12	76k8	1	0W35	MF	0001-0002.917/-
R13	68R1	1	0W35	MF	0001-0000.427/-
R14	68R1	1	0W35	MF	0001-0000.427/-
R15	8R25	1	0W35	CF	0000-7518.854/-
R16	68R1	1	0W35	MF	0001-0000.427/-
C1	1n	20	100	Cer.	0001-0004.698/-
C2	100n	10	100	PE	0001-0010.365/-
C3	10n	2	100	Cer.	0001-0004.818/-
C4	4p7	20	10	Tant.	0001-0040.801/-
C5	10p	+50-10	63	Elect.	0001-0041.693/-
C6	22n	20	40	Cer.	0001-0006.418/-
TR1				2N2369A	0000-7542.066/-
TR2				2N3251	0001-0017.342/-
TR3				2N2369A	0000-7542.066/-
TR4				2N3251	0001-0017.342/-
TR5				BC109	0000-7602.029/-
TR6				BC109	0000-7602.029/-
L1	590pH			L28/4502/0	4502-1428.008/4
A40				P.C.B. SYNTHESIZER AMPLIFIER	4502-0140.002/3

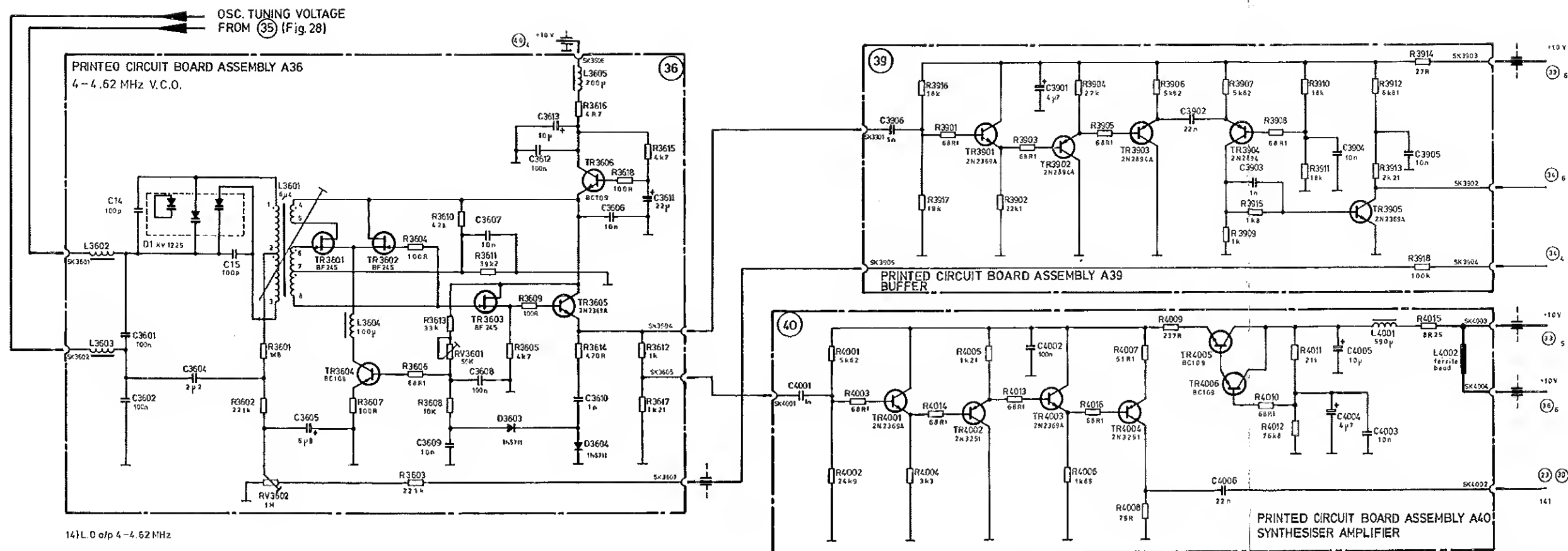
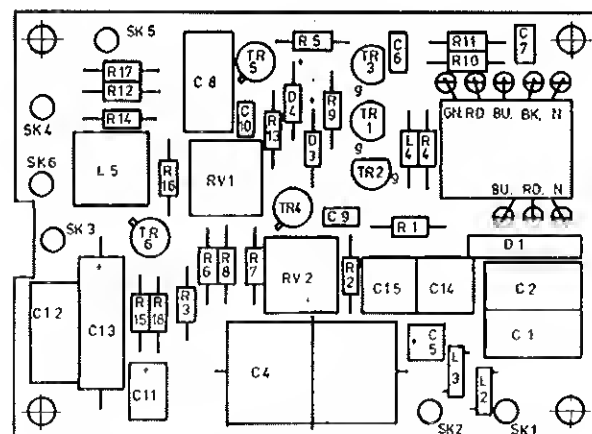
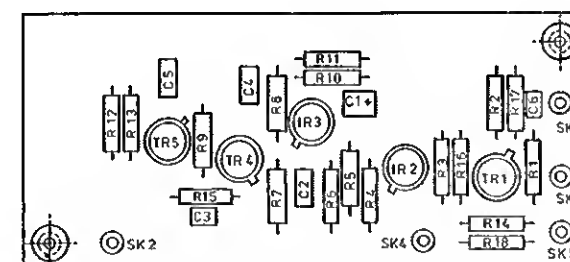


Fig. 30 Circuit Diagram,
4...4.62MHz V.C.O., (36) ;
Buffer, (39) and
Synthesiser Amplifier, (40)



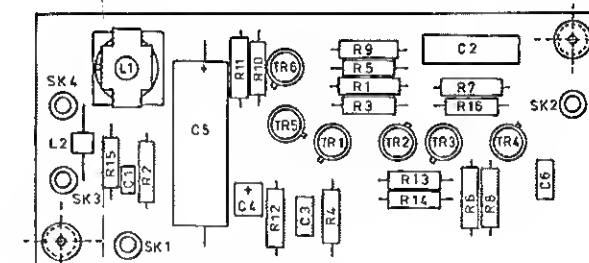
CIRCUIT REFERENCES TO BE PRECEDED
BY BOARD ASSEMBLY NUMBERS
e.g. R15 BECOMES R3615
C9 BECOMES C3609.

Fig. 31 Component Layout, 4...4.62MHz V.C.O., (36)



CIRCUIT REFERENCES TO BE PRECEDED
BY BOARD ASSEMBLY NUMBERS.
e.g. R11 BECOMES R3911
C1 BECOMES C3901.

Fig. 32 Component Layout, Buffer Amp., (39)



CIRCUIT REFERENCES TO BE PRECEDED
BY BOARD ASSEMBLY NUMBERS.
e.g. R15 BECOMES R4015
C5 BECOMES C4005.

Fig. 33 Component Layout,
Synthesiser Amplifier, (40)

ASSEMBLY P.C.B. A38 CRYSTAL OSCILLATOR

REF.	VALUE	TOL. ± %	RATING	TYPE	PART NO.
R7	100R	1	0W35	MF	0001-0000.537/-
R11	3M3	5	0W25	CF	0001-0007.336/-
R12	5k62	1	0W35	MF	0001-0001.895/-
R13	5k62	1	0W35	MF	0001-0001.895/-
R14	270R	2	0W25	MF	0000-7559.499/-
R15	270R	2	0W25	MF	0000-7559.499/-
R16	33R	2	0W25	MF	0000-7601.347/-
R18	301k	1	0W35	MF	0001-0062.025/-
R19	68R1	1	0W35	MF	0001-0000.427/-
R20	2k21	1	0W35	MF	0001-0001.497/-
R22	12k1	1	0W35	MF	0001-0002.218/-
R23	8k25	1	0W35	MF	0001-0002.056/-
R24	1k	1	0W35	MF	0001-0001.219/-
R25	10R	1	0W35	MF	0001-0000.074/-
R26	1k	1	0W35	MF	0001-0001.219/-
R27	10k	1	0W35	MF	0001-0002.137/-
R32	100k	1	0W35	MF	0001-0002.991/-
R33	10k	1	0W35	MF	0001-0002.137/-
R34	10k	1	0W35	MF	0001-0002.137/-
R35	562R	1	0W35	MF	0001-0001.015/-
C4	22u	20	16	Tant.	0001-0040.966/-
C6	1n	10	63	Cer.	0001-0004.698/-
C7	22n	20	40	Cer.	0001-0006.418/-
C8	10n	20	40	Cer.	0001-0004.818/-
C9	330p	2	63	Cer.	0001-0004.630/-
C10	150p	2	63	Cer.	0001-0004.575/-
C11	120p	2	63	Cer.	0001-0004.562/-
C12	3u3	20	16	Tant.	0001-0040.775/-
C13	22u	20	16	Tant.	0001-0040.966/-
C14	3u3	20	16	Tant.	0001-0040.775/-
C15	220p	2	63	Cer.	0001-0004.601/-
C16	220p	2	63	Cer.	0001-0004.601/-
C17	1n	10	63	Cer.	0001-0004.698/-
C18	10n	20	40	Cer.	0001-0004.818/-
C21	1n	10	63	Cer.	0001-0004.698/-
C22	1n	10	63	Cer.	0001-0004.698/-
C23	10n	20	40	Cer.	0001-0004.818/-
C24	22p	2	63	Cer.	0001-0004.290/-
TR2				2N2369A	0000-7542.066/-
TR3				2N2369A	0000-7542.066/-
TR4				BC109	0000-7602.029/-
D5				1N914 or 1N4448	0001-0018.493/-
D6				1N914 or 1N4448	0001-0018.493/-
IC2				4013	0001-0015.991/-
IC4				4077	0000-7565.218/-
IC5				4024	0001-0016.039/-
VC1	2 - 18p		300	809 - 05003	0000-7598.463/-
L1	12.7uH			INDUCTOR	4502-1431.008/4
L2	52.7uH			INDUCTOR	4502-1432.007/4
XL1	8MHz			FILTER	4502-9702.001/4
A38				P.C.B. CRYSTAL OSCILLATOR	4502-0138.001/3

ASSEMBLY P.C.B. A37 DIVIDER 3

REF.	VALUE	TOL. ± %	RATING	TYPE	PART NO.
R1	18k	2	0W25	MF	0001-0027.484/-
R2	18k	2	0W25	MF	0001-0027.484/-
R3	68R1	1	0W35	MF	0001-0000.427/-
R4	5k62	1	0W35	MF	0001-0001.895/-
R5	5k62	1	0W35	MF	0001-0001.895/-
R6	681R	1	0W35	MF	0001-0001.086/-
R7	68R1	1	0W35	MF	0001-0000.427/-
R8	18k	2	0W25	MF	0001-0027.484/-
R9	18k	2	0W25	MF	0001-0027.484/-
R10	1k8	2	0W25	MF	0001-0014.510/-
R11	22k1	1	0W35	MF	0001-0002.441/-
R12	15R	1	0W35	MF	0001-0014.879/-
C1	100n	20	40	PE	0000-7639.144/-
C2	1n	10	63	Cer.	0001-0004.698/-
C3	10n	20	40	Cer.	0001-0004.818/-
C4	33u	20	6.3	Tant.	0001-0040.995/-
TR1				2N3251	0001-0017.342/-
TR2				2N3251	0001-0017.342/-
TR3				2N2369A	0000-7542.066/-
IC1				4518	0001-0016.178/-
IC2				40175	0000-7529.416/-
IC3				4011	0001-0015.988/-
L1				INDUCTOR	0000-7567.737/-
L2				INDUCTOR	4502-1430.009/4
A37				P.C.B. DIVIDER 3	4502-0137.002/3